

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)

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See Form PCT/IPEA/416		
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<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 6 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the report</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>	
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Date of submission of the demand  2 February 2005	Date of completion of this report  21 FEB 2006
Name and mailing address of the IPEA/US  Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 FACSIMILE NO. 571-273-3201	Authorized Officer  <b>Blaine R. Copenheaver</b> Telephone No. 571-272-7774

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US2004/021532

## Box No. I Basis of the report

1. With regard to the language, this report is based on:
- The international application in the language in which it was filed
- A translation of the international application into , which is the language of a translation furnished for the purposes of:
- international search (under Rules 12.3(a) and 23.1 (b))
  - publication of the international application (under Rule 12.4(a))
  - international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
- the international application as originally filed/furnished
- the description:  
pages 1 - 13 as originally filed/furnished  
pages\* received by this Authority on  
pages\* received by this Authority on
- the claims:  
pages as originally filed/furnished  
pages\* as amended (together with any statement) under Article 19  
pages\* 14 - 19 received by this Authority on 4 February 2005  
pages\* received by this Authority on
- the drawings:  
pages 1/7 - 7/7 as originally filed/furnished  
pages\* received by this Authority on  
pages\* received by this Authority on
- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
- the description, pages  
 the claims, Nos. 5, 6, 8, 10  
 the drawings, sheets/figs  
 the sequence listing (*specify*):  
 any table(s) related to the sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- the description, pages  
 the claims, Nos.  
 the drawings, sheets/figs  
 the sequence listing (*specify*):  
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\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US2004/021532

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 2 – 4, 7, 9, 11 – 38	YES
	Claims 1	NO
Inventive step (IS)	Claims 7, 9, 11 – 38	YES
	Claims 1 – 4	NO
Industrial applicability (IA)	Claims 1 – 4, 7, 9, 11 – 38	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)**

The following documents identified in the International Search Report have been considered as relevant for the purposes of this report:

D1: DE 100 11 077

D2: US 4 677 533

Novelty (N) (claim 1)

D1 discloses a lamp comprising both an incandescent light bulb and a plurality of light emitting diodes of different colours. The light bulb and the light emitting diodes are powered by separate electrical circuits, and it is possible to switch between these circuits to supply power to one of the bulb or LEDs. D1 therefore discloses all of the features of claim 1.

Inventive Step (IS) (claims 1 – 4)

Claim 1 also lacks an inventive step for the reasons given above.

D2 discloses a lighting fixture comprising an incandescent light bulb and a number of different coloured light emitting diodes (see figures 7 & 8). The overall colour balance achieved by the fixture is controlled by a number of rheostats (dimmer switches), which control the light emitted from the LEDs and from the incandescent bulb (see column 3 lines 29 – 36). It is considered that it would be obvious to the person skilled in the art to combine the teachings of D1 & D2 to arrive at the invention defined in claims 2 & 3. These claims therefore lack an inventive step in light of the combination of D1 & D2. Furthermore, the feature added by claim 4 would be within the common general knowledge of the person skilled in the art in light of the disclosure of D1. Claims 1 – 4 therefore lack an inventive step.

The features of the remaining claims, particularly relating to the individual control of each one of the light emitting diodes, the control of the perceived colour of each light emitting diode and the use of a wireless remote control to achieve remote programming are not taught or suggested by any of the identified prior art documents, either individually or in obvious combination.

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

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**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 7 & 9 are not fully supported by the description because the embodiment of the invention to which they relate (the embodiment defined in claim 11) is not described as including a dimmer switch or a temperature, scent, motion or sound sensor. These features are only described as belonging to a different embodiment of the invention.
2. Claim 37 is not clear with regard to the meaning of the term "programmed". It is not clear whether, in the context of the claim, the control circuit is remotely *programmed* or remotely *controlled*. The term *programming* suggests that an entire control sequence of events is defined using the remote control, but the description appears to only disclose the instantaneous control of one aspect of the lights via said remote control.

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WE CLAIM:

1. An electrical lamp comprising:

an illumination socket mounting an illumination bulb, chosen from the group consisting essentially of incandescent bulbs, fluorescent bulbs and halogen bulbs, which bulb emits illumination light when supplied with electrical power;

a plurality of light emitting diodes which emit light of different colors when supplied with electrical power;

a base in which the illumination socket and the light emitting diodes are positioned in proximity to each other;

a first electrical circuit connected to supply electrical power to an illumination bulb mounted in the illumination socket for causing the illumination bulb to emit illuminating light;

a second electrical circuit connected to supply electrical power to the light emitting diodes for causing the light emitting diodes to emit light of different colors; and

switching means for selectively switching the application of electrical power between the first electrical circuit and the second electrical circuit.

2. The electrical lamp according to claim 1, wherein the first electrical circuit includes a dimmer to adjust the intensity of the illumination light.

3. The electrical lamp according to claim 1, wherein the second electrical circuit includes a dimmer configured for selective adjustment of the intensities of the light of different colors.

4. The electrical lamp according to claim 1, further including a programmable circuit connected to the second electrical circuit and configured to adjust the intensities of the light of different colors according to a predetermined program.

5. (Canceled)

6. (Canceled)

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7. The light bulb according to claim 11, further comprising a dimmer controlling the control circuit for selective adjustment of at least one of the intensities and perceived colors of light from the plurality of light emitting diodes.

8. (Canceled)

9. The light bulb according to claim 11, further including a sensor for sensing at least one of temperature, scent, motion, and sound, wherein the control circuit adjusts at least one of the intensities and colors of light in response to a signal from the sensor.

10. (Canceled)

11. A light bulb comprising:  
a base configured to mate with a light bulb socket;  
a light emitting device mounted on the base and selected from the group consisting essentially of a compact fluorescent bulb, incandescent bulb, halogen bulb, and low vapor mercury light emitting device;  
a plurality of light emitting diodes mounted on the base, which emit light of different colors;  
a control circuit which supplies power from the light socket, when the base is mounted therein, to the light emitting device and the plurality of light emitting diodes; and  
a translucent housing mounted on the base and containing the light emitting device and the plurality of light emitting diodes,  
wherein the control circuit individually controls each one of the plurality of light emitting diodes to control at least one of the perceived color and intensity of light emitted from the plurality of light emitting diodes.

12. The bulb according to claim 11, wherein the light emitting device comprises a plurality of compact fluorescent bulbs.

13. The bulb according to claim 11, wherein the light emitting device is a fluorescent bulb about 2 to about 21 inches in length, the fluorescent bulb being folded back

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on itself a plurality of times so as to form a plurality of lengths extending up from the base within the housing.

14. The bulb according to claim 12, wherein there are a plurality of light emitting diodes positioned around the fluorescent bulbs, in a circumferential direction.

15. The bulb according to claim 14, wherein adjacent light emitting diodes, in a circumferential direction, are different color light emitting diodes.

16. The bulb according to claim 13, wherein there are a plurality of light emitting diodes positioned around the fluorescent bulb.

17. The bulb according to claim 16, wherein adjacent light emitting diodes, in a circumferential direction, are different color light emitting diodes.

18. The bulb according to claim 11, wherein the plurality of light emitting diodes are positioned on the base so as to surround the light emitting device.

19. The bulb according to claim 18, wherein adjacent light emitting diodes, in a circumferential direction, are different color light emitting diodes.

20. The bulb according to claim 11, wherein the light emitting device and the plurality of light emitting diodes are powered from a common circuit board.

21. The bulb according to claim 11, wherein the light emitting device emits light within the range of about 160 to about 4200 lumens.

22. The bulb according to claim 21, wherein light emitting device emits light within the range of about 240 to about 2625 lumens.

23. The bulb according to claim 22, wherein the light emitting device emits light within the range of about 320 to about 2100 lumens.

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24. The bulb according to claim 11, further comprising a user interface connected to the control circuit, wherein the user interface allows for programming of the color of the light to be emitted from the housing by the plurality of light emitting diodes.

25. The bulb according to claim 11, further comprising a processor for controlling the control circuit to control the plurality of light emitting diodes to produce at least one predetermined presentation of light emission which varies, during the presentation, at least one of the perceived color and intensity of light emitted from the housing by the plurality of light emitting diodes.

26. The bulb according to claim 25, further comprising a memory storing one or more programs defining the at least one predetermined presentation.

27. The bulb according to claim 26, further comprising a user interface that allows a user to select from the at least one predetermined presentation.

28. The bulb according to claim 25, further comprising a user interface that allows a user to perform at least one of:

- i) activating one or more of a plurality of predetermined presentations; and
- ii) selecting one or more perceived colors of light to be emitted from the housing by the plurality of light emitting diodes.

29. The bulb according to claim 25, wherein the processor is controlled remotely by a user so as to perform at least one of:

- i) activating one or more of a plurality of predetermined presentations; and
- ii) selecting one or more perceived colors of light to be emitted from the housing by the plurality of light emitting diodes.

30. The bulb according to claim 25, wherein the bulb further comprises a sensor for sensing power activation so as to enable the user to remotely control the processor by toggling a power switch that controls the power through the light socket on which the bulb is mounted.

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31. The bulb according to claim 29, further comprising a sensor that enables the processor to be remotely controlled by one of an infrared signal and a radio signal.

32. A light bulb comprising:  
a base configured to mate with a light bulb socket;  
a light emitting device mounted on and receiving power from the base, the light emitting device being selected from the group consisting essentially of halogen, incandescent, fluorescent, and low vapor mercury light emitting devices;  
a plurality of light emitting diodes mounted on and receiving power from the base, the plurality of light emitting diodes emitting light of different colors;  
a programmable processor that individually controls each of the plurality of light emitting diodes to control the activation, perceived color and intensity of the light emitted from the plurality of the light emitting diodes; and  
a translucent housing mounted on the base and containing the light emitting device and the plurality of light emitting diodes.

33. The bulb according to claim 32, wherein the light emitting device emits light in the range of about 320 to about 2100 lumens.

34. The bulb according to claim 32, wherein adjacent light emitting diodes mounted on the base, in a circumferential direction, are different color light emitting diodes.

35. The bulb according to claim 32, further comprising a memory storing programs for instructing the processor to perform a plurality of predetermined presentations of light emission each of which varies at least one of the perceived color and intensity of light emitted from the housing by the plurality of light emitting diodes.

36. The bulb according to claim 35, wherein the programs are activated remotely by a user.

37. A light bulb comprising:  
a base configured to mate with a light bulb socket;

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a light emitting device mounted on and receiving power from the base, the light emitting device being selected from the group consisting essentially of halogen, incandescent, fluorescent, and low vapor mercury light emitting devices;

a plurality of light emitting diodes mounted on and receiving power from the base, the plurality of light emitting diodes emitting light of different colors;

a control circuit that controls the activation and perceived color of light emitted from the plurality of light emitting diodes; and

a translucent housing mounted on the base and containing the light emitting device and the plurality of light emitting diodes,

wherein the control circuit is remotely programmed from a wireless remote control.

38. The bulb according to claim 37, wherein the wireless remote controls a plurality of predetermined presentations of light emission stored in the bulb, each of which varies at least one of the perceived color and intensity of light emitted from the housing by the plurality of light emitting diodes.

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